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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,694	06/20/2007	Angelo D'Arrigo	78857.105667	9542
86528	7590	11/13/2009		
King & Spalding LLP 401 Congress Avenue Suite 3200 Austin, TX 78701			EXAMINER GORDON, BRYAN P	
			ART UNIT 2837	PAPER NUMBER
			MAIL DATE 11/13/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/596,694

**Applicant(s)**

D'ARRIGO, ANGELO

**Examiner**

BRYAN P. GORDON

**Art Unit**

2837

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 October 2009 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. Claims 1 + 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant claims a pretensioning means for piezoelectric actuator by physically compressing the piezoelectric actuator but not the tube-shaped body. However, the examiner does not see how the tube-shaped body is not compressed when the piezoelectric actuator is being compressed. Looking at Figure 3E of the application the bolt 39 is used to pretension the actuator 31. Between the bolt and actuator lies the tube-shaped body 38. As the bolt is being tightening it would inherently compress the tube-shaped body as it compresses the actuator. Paragraph 0035 of the specification even says the bolt is screwed into the tube-shaped body 38. The examiner realizes paragraph 0035 says the bolt pretensions the actuator 31 and does not say if it compresses the tube-shaped body 38 but the examiner

believes that the tube-shaped body is inherently compressed when the bolt 39 is tighten. Based on the examiners interpretation a rejection was formulated in which the tube-shaped body is compressed.

***Claim Objections***

3. Claims 1 + 10 are objected to because the applicant is claiming pretensioning the piezoelectric actuator by physically compressing the piezoelectric actuator but not the tube-shaped body. However, looking over the Figures and reading the specification the examiner does not see how the tube-shaped body is not compressed. The bolt 39 (Figure 3E) is what pretenses the piezoelectric actuator 31. Between the bolt and actuator there lies the tube-shaped body 38 and a body 37. It would be inherently to one of ordinary skill in the art that as the bolt 39 is tightening it would compress the tube-shaped body along with the body and actuator. Therefore the applicant is claiming something that their application does not accomplish.

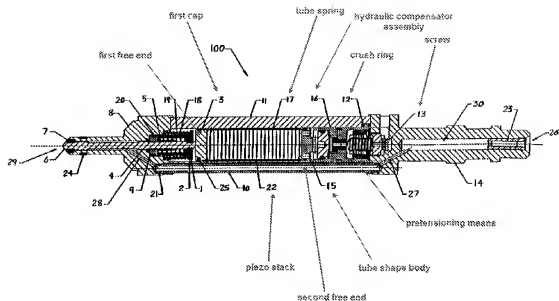
***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim rejected under 35 U.S.C. 102(b) as being anticipated by Shen (US PN 6,499,471).



**Figure A**

6. Considering claims 1 and 10, Shen (Figure A) teaches a piezoelectric actuator unit comprising: a tube spring (17); a piezoelectric actuator (22), that is inserted into the tube spring, a first cap (3), that is connected to the tube spring at a first free end (See Figure A above) of the tube spring and which is adjoined by the piezoelectric actuator (22), a tube-shaped body (15) that is connected to the tube spring by joining and is arranged in the area of a second free end (see Figure A), and a means for pretensioning the piezoelectric actuator after the tube spring (17) is connected to the first cap (3) and the tube-shaped body (15) (col. 3 lines 7-15, the device is already together therefore all the parts are connected) the means for pretensioning being supported by the tube-shaped boy (col. 5 lines 52-54), and pretensions the

piezoelectric actuator (col. 5 lines 49-57) by physically compressing the piezoelectric actuator (22) but not the tube-shaped body.

7. Considering claims 4 and 13, Shen (Figure A) teaches a thread in the tube-shaped body and wherein the pretensioning means is a screw (13) that is screwed into the thread.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 2-3, 5-7, 11-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (US PN 6,499,471) and in view of Mattes (US PN 6,326,717).

11. Considering claims 2 and 11, Shen teaches the claimed invention as described above except for the body that comprises a disc-shaped part.

In the same field of endeavor, Mattes teaches a body that comprises a disc-shaped part (20) for the benefit of producing a cheaper way to manufacture the actuator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include body that comprises a disc-shaped part with Voigt's device for the benefit described above.

12. Considering claims 3 and 12, Mattes teaches the body being a bolt-shaped body (abstract).
13. Considering claims 5 and 14, Mattes teaches the bolt-shaped body is spherically shaped on its shaft side (abstract).

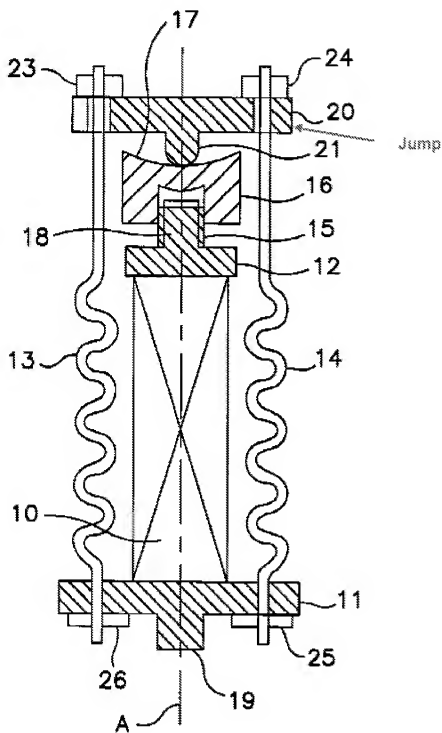


Figure B



14. Considering claims 6 and 15, Mattes (Figure 1) teaches the tube-shape body has a jump in its diameter on its outer circumference.

15. Considering claims 7 and 16, the method of forming the tube-shaped body (by welding) is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

#### ***Response to Arguments***

16. Applicant's arguments filed 30 September 2009 have been fully considered but they are not persuasive. Regarding the argument that Shen does not teach a means for pretensioning the piezoelectric actuator after the tube spring is connected to the first cap and the tube-shaped body as stated in claims 1 + 10 Shen does teach a pretensioning means (pre-compressing) which occurs after the full assembly of the actuator (since as shown in Figure 1 the device is fully assembled). Regarding the argument that Shen does not teach a pretensioning a piezoelectric actuator by physically compressing the piezoelectric actuator but not the tube-shaped body as stated above the applicant's own specification and drawings show the tube-shaped body being compressed as stated above in the 112 rejection. Therefore, the applicant's argument is moot and correction is required.

#### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN P. GORDON whose telephone number is

(571)272-5394. The examiner can normally be reached on Monday-Thursday 8:00-5:30, Friday 7:30-4:00.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Walter Benson/  
Supervisory Patent Examiner, Art Unit 2837

/Bryan P Gordon/  
Examiner, Art Unit 2834